

# Physics – Formula Table

## Formula Table

Name	Definition	Unit	Formula	Reference
Charge	Used to measure electric charge.	coulomb (c)	$q = It$	Textbook, P. 456
Voltage	Used to measure electrical pressure.	volts (v)	$V = IR$	General Knowledge
Resistance	Used to measure electrical resistance.	ohms ( $\Omega$ )	$R = \frac{V}{I}$	General Knowledge
Ampere	Used to measure electrical current.	amps (a)	$I = \frac{q}{t}$ $I = \frac{V}{R}$	General Knowledge
Voltage (Effective)	Measurement of the effective voltage.	volts (v)	$V_{Eff} = \frac{V_{Peak}}{\sqrt{2}}$	Textbook: P. 483
Voltage (Peak)	Measurement of the peak voltage.	volts (v)	$V_{Peak} = V_{Eff} \cdot \sqrt{2}$	Textbook: P. 483
Current (Effective)	Measurement of the effective current.	amps (a)	$I_{Eff} = \frac{I_{Peak}}{\sqrt{2}}$	Textbook: P. 483
Current (Peak)	Measurement of the peak current.	amps (a)	$I_{Peak} = I_{Eff} \cdot \sqrt{2}$	Textbook: P. 483
Total Resistance (Series)	Measurement of the total resistance in a series circuit.	ohms ( $\Omega$ )	$R_T = R_1 + R_2 + R_n$	Textbook: P. 472
Total Resistance (Parallel)	Measurement of the total resistance in a parallel circuit.	ohms ( $\Omega$ )	$\frac{1}{R_T} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_n}$	General Knowledge
Total current (Parallel)	Measurement of the total current in a parallel circuit (the current does not change in a series).	amps (a)	$I_T = I_1 + I_2 + I_n$	Textbook: P. 473
Resistance (Of a Material)	Measurement of the total resistance of a certain component, material or conductor.	ohms ( $\Omega$ )	$R = \frac{\rho L}{A}$	Textbook: P. 465
Power	Measurement of Power	watts (W)	$P = VI$ $P = \frac{E}{t}$	Textbook: P. 490

### Key:

$V_{Peak}$ – The peak voltage, in volts $V_{Eff}$ – The effective voltage, in volts $\rho$ – Resistivity, in $\Omega \cdot m$ $L$ – The length of a material, in meters $A$ – The cross-section of a wire, in meters <sup>2</sup> $I_{Peak}$ – The peak current, in amps $I_{Eff}$ – The effective current, in amps $P$ – Power, in watts	$V$ – Voltage, in volts $I$ – Current, in amps $R$ – Resistance, in ohms $E$ – Energy, in joules $q$ – Charge, in Coulombs $n$ – Electrons $t$ – Time, in seconds $W$ – Energy dissipated, in watts.
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